

Title (en)

METHODS FOR CREATING A DENSIFIED GROUP IV SEMICONDUCTOR NANOPARTICLE THIN FILM

Title (de)

VERFAHREN ZUR ERZEUGUNG EINER VERDICHTETEN GRUPPE-IV-HALBLEITER-NANOPARTIKELDÜNNNSCHICHT

Title (fr)

PROCÉDÉS DE CRÉATION D'UN FILM MINCE DE NANOPARTICULES SEMI-CONDUCTRICES DU GROUPE IV DENSIFIÉ

Publication

EP 2089897 A2 20090819 (EN)

Application

EP 07865165 A 20071204

Priority

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Abstract (en)

[origin: WO2008073763A2] A method of forming a densified nanoparticle thin film in a chamber is disclosed. The method includes positioning a substrate in the chamber; and depositing a nanoparticle ink, the nanoparticle ink including a set of Group IV semiconductor particles and a solvent. The method also includes heating the nanoparticle ink to a first temperature between about 30°C and about 300°C, and for a first time period between about 1 minute and about 60 minutes, wherein the solvent is substantially removed, and a porous compact is formed. The method further includes exposing the porous compact to an HF vapor for a second time period of between about 2 minutes and about 20 minutes, and heating the porous compact for a second temperature of between about 25°C and about 60° C; and heating the porous compact to a third temperature between about 100° C and about 1000° C, and for a third time period of between about 5 minutes and about 10 hours; wherein the densified nanoparticle thin film is formed.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

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